

Base station 100 serves as a relay node between a mobile terminal and an application server on the backbone network, and transfers a radio packet received from the mobile terminal through wireless I/F section 101 to IP processing section 103, TCP input section 109 and protocol relay section 113 successively in this order. At this point, with respect to the packet, the IP header is processed and then removed in IP processing section 103, the TCP header is processed and then removed in TCP processing section 107, and the data is transferred to protocol relay section 113 along with the TCP segment information described in both headers. Protocol relay section 113 has a conversion table, and based on the table, performs proxy processing.